



3 models  
Water heat

## Fan heater SWT

Ceiling mounted fan heater with water heat

### Application

The SWT fan heater is used for heating entrances, stores, industrial premises, workshops, sports halls, garages and shops. The low height means that SWT can also be recessed into a suspended ceiling.

### Comfort

Frico's fan heaters are extremely quiet and quickly provide comfortable heating.

### Operation and economy

Frico's fan heaters have a long life, providing fast and effective heating at a low cost. SWT is very easy to install and very reliable. The hinge on the front panel allows for inspection and cleaning.

### Design

The SWT fan heater has a robust design in white enamelled steel panels. SWT is intended for water connection and is ceiling mounted.

### Product specifications

- Installed directly to the ceiling or suspended from brackets.
- Intended for water temperatures up to +80 °C and 10 bar.
- Two fan speeds.
- Front panel with hinge.
- Simple 230V~ installation.
- Maximum ambient temperature +30 °C.
- The water coil has copper pipes and aluminium flanges.
- Bearing carried fan motor with thermal protection.
- Outer casing in galvanised white enamelled steel panels.

## Technical specifications

### Fan heater SWT (IP44)

Type	Heat output*1 [kW]	Air flow [m³/h]	Air flow [m³/s]	Sound level*2 [dB(A)]	$\Delta t$ *1,3 [°C]	Air throw*4 [m]	Air throw*4 with extension collar [m]	Water volume*5 [l]	Voltage [V]	Amperage [A]	Weight [kg]
SWT02	7,8/11	700/1100	0,19/0,31	37/53	33/29	2,2/4	4/7	1,2	230V~	0,4	19
SWT12	14/18	1300/2000	0,36/0,56	44/57	25/22	2,7/4,5	5/8	1,7	230V~	0,6	26
SWT22	29/40	2500/3900	0,69/1,08	48/60	34/30	4,5/7,5	7/12	3,9	230V~	1,0	41

\*1) Applicable at water temperature 80/60 °C, air temperature, in +15 °C. At lowest/highest airflow.

\*2) Conditions: Distance to the unit 5 metres. At lowest/highest airflow.

\*3)  $\Delta t$  = temperature rise of passing air at maximum heat output and lowest/highest airflow.

\*4) The air throw data above is valid when the horizontally adjustable air director is used and the outlet temperature is +40 °C and the room temperature is +18 °C.

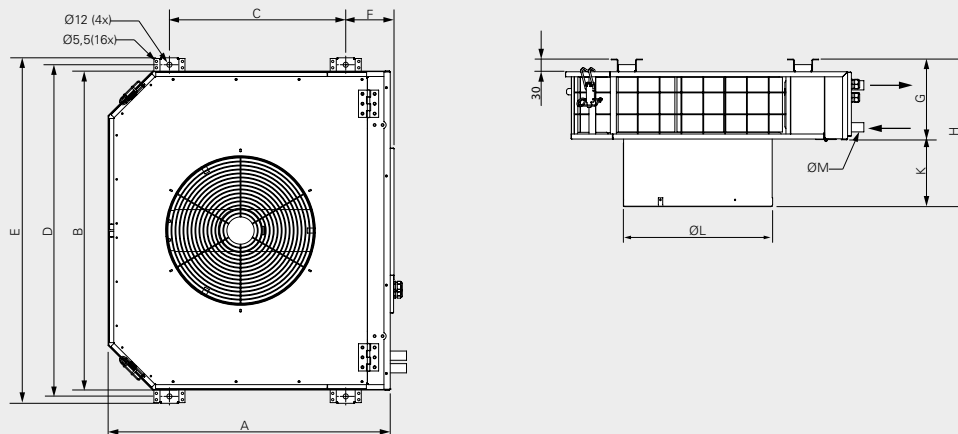
The air throw is defined as the distance in a straight angle from the fan heater to the the point where the air speed has dropped to 0,2 m/s.

\*5) Water volume inside water coil.

Protection class: IP44.

CE compliant.

## Dimensions



	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	K [mm]	ØL [mm]	ØM [mm]
SWT02	535	640	280	670	705	125	195	330	135	305	22
SWT12	675	760	420	790	825	115	195	355	160	355	22
SWT22	735	1070	480	1100	1135	110	300	415	115	430	28

# Fan heater SWT

## Mounting and connection

### Mounting

Fan heater SWT is installed directly to the ceiling or suspended from brackets. The heater is screwed into place in the ceiling using brackets. For minimum dimensions with permanent installation, see diagram 1.

### Connection of heating coil

The water inlet, with or without valve, is connected to the heater's lowest positioned pipe and the outlet to the highest positioned pipe. The connections to SWT02 and SWT12 are 22 mm, external thread and on SWT22 28 mm, external thread. The bleed valve must be connected to the high point outside of the unit or to the outlet pipe in the installation. Bleed and drain valves not included with the unit. Installations that are exposed to frost must be equipped with an external automatic frost protection to ensure that the water coil does not split when frozen.

### Connection

SWT fan heaters are designed for permanent installation and are connected via knock-outs on the rear of the heater.

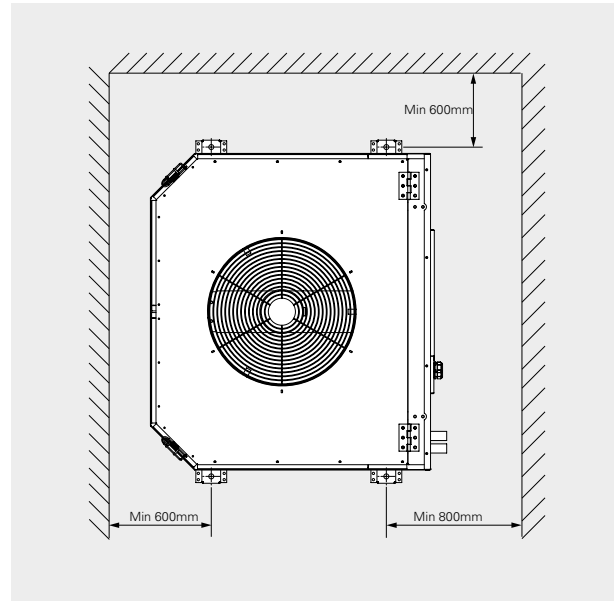


Fig. 1: Minimum distance for fixed installation.

## Control options

### Control by thermostat only

The thermostat starts/stops the fan and also controls the heat supply on/off. The fan is set to run on high speed. Complete regulation kit:

- KRT1900 or TKS16, room thermostat
- TVVS20/25, 2-way valve or TRVS20/25 3-way valve + SD20, actuator

### 2-step control of airflow only

The air flow is manually regulated in 2 steps. No heat regulation, maximum water flow through the heating coil.

Complete regulation kit:

- CB20, control panel

### Thermostat and 2-step control

The thermostat starts/stops the fan and also controls the heat supply on/off. The air flow is manually regulated in 2 steps.

Complete regulation kit:

- CB20, control panel
- KRT1900 or TKS16, room thermostat
- TVVS20/25, valve + SD20, actuator

### 5-step control of airflow only

The air flow is manually regulated in 5 steps. No heat regulation, maximum water flow through the heating coil.

Complete regulation kit:

- RE1,5, 5-step regulator max 1,5A, or RE3, 5-step regulator max 3A, or RE7, 5-step regulator max 7A

### Thermostat and 5-step control

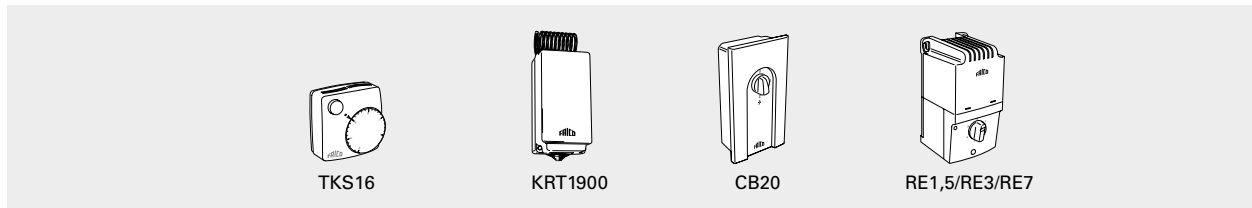
The thermostat starts/stops the fan and also controls the heat supply on/off. The air flow is manually regulated in 5 steps.

Complete regulation kit:

- RE1,5, 5-step regulator max 1,5A, or RE3, 5-step regulator max 3A, or RE7, 5-step regulator max 7A
- KRT1900 or TKS16, room thermostat
- TVVS20/25, 2-way valve or TRVS20/25 3-way valve + SD20, actuator

For further information and options, see the "Controls" section.

## Controls



### TKS16, thermostat

Processor controlled thermostat with visible dials and 1-pole main switch. Setting range +5 – +30 °C. Alternating contact for heating or cooling. Connection voltage: 230 V. Max. breaking current: 16 A. IP30.

### KRT1900, capillary tube thermostat

Capillary tube thermostat with concealed dial. Setting range 0 – +40 °C. Max. breaking current: 16/10 A (230/400 V). IP55.

### CB20, control box

Controls the airflow in 2 steps. Can control several units. Max input 12 A. IP44.

### RE1,5/RE3/RE7, 5-step change-over switch for air flow

Controls the air flow in 5 steps. **RE1,5** controls maximum 1,5 A. **RE3** controls maximum 3 A. **RE7** controls maximum 7 A. To control the heat, a suitable thermostat and a valve + actuator are needed. IP54.

Type	Description	LxHxW [mm]
<b>TKS16</b>	Electronic thermostat, knob, 1-pole switch	80x80x39
<b>KRT1900</b>	Capillary tube thermostat	165x57x60
<b>CB20</b>	Control box	155x87x43
<b>RE1,5</b>	5-step change-over switch for air flow 1,5 A	200x105x105
<b>RE3</b>	5-step change-over switch for air flow 3 A	200x105x105
<b>RE7</b>	5-step change-over switch for air flow 7 A	257x147x145

## Water control

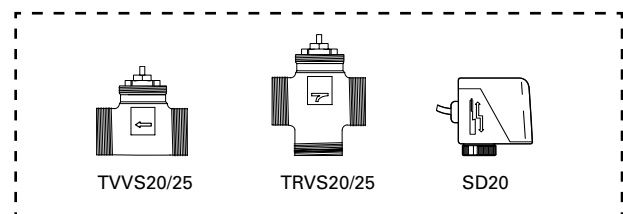
### TVVS20/25, valves + SD20, actuator\*

TVVS20/25, 2-way regulation valve and SD20, actuator on/off provides a basic form of water regulation, without the possibility of adjusting or shutting the water flow off, e.g. when making maintenance. A suitable thermostat is chosen to regulate TVVS20/25 and SD20. DN20/25.

### TRVS20/25, 3-way control valve

If a 3-way valve is preferred, TRVS20/25 can be used instead of TVVS20/25.

\*) For further information and options regarding our water controls, see the "Controls" section.



Type	Description
<b>TVVS20</b>	2-way valve DN20
<b>TVVS25</b>	2-way valve DN25
<b>TRVS20</b>	3-way valve DN20
<b>TRVS25</b>	3-way valve DN25
<b>SD20</b>	Actuator on/off 230V

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## Accessories

### SWTCF, filter

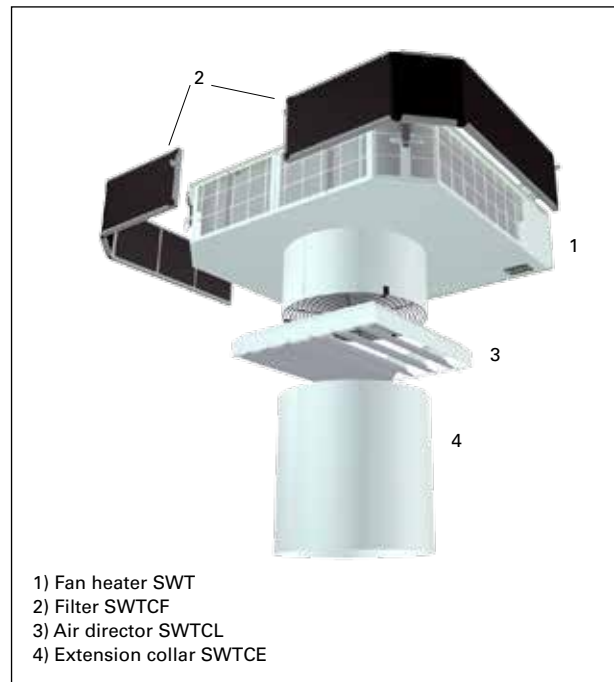
With the filter installed the interval for cleaning the water coil is extended. The filter is delivered in two pieces.

### SWTCL, air director

To avoid draughts at low ceiling heights the air director can be installed to direct air more to the side.

### SWTCE, extension collar

At high installation the outlet collar for the SWT can be extended. This increases the throw pattern of the air. SWTCE02 increases the throw pattern to 4-7 m, SWTCE12 increases it to 5-8 m and SWTCE22 to 7-12 m.



- 1) Fan heater SWT
- 2) Filter SWTCF
- 3) Air director SWTCL
- 4) Extension collar SWTCE

Type	Description
<b>SWTCE02</b>	Extension collar 350 mm to SWT02, increases the throw pattern to 4-7 m
<b>SWTCE12</b>	Extension collar 350 mm to SWT12, increases the throw pattern to 5-8 m
<b>SWTCE22</b>	Extension collar 350 mm to SWT22, increases the throw pattern to 7-12 m
<b>SWTCF02</b>	Filter for SWT02
<b>SWTCF12</b>	Filter for SWT12
<b>SWTCF22</b>	Filter for SWT22
<b>SWTCL02</b>	Air director for SWT02
<b>SWTCL12</b>	Air director for SWT12
<b>SWTCL22</b>	Air director for SWT22

## Output charts water

Incoming / outgoing water temperature 80/60 °C														
Type	Fan position	Airflow [m³/s]	Air temp. in = +10 °C				Air temp. in = +15 °C				Air temp. in = +20 °C			
			Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]
SWT02	max	0,31	12,0	42	0,15	11,2	10,8	44	0,13	9,3	9,6	46	0,11	7,5
	min	0,19	8,7	46	0,10	6,2	7,8	48	0,09	5,1	6,9	50	0,09	4,1
SWT12	max	0,56	20,3	39	0,25	17,8	18,4	42	0,23	14,8	16,5	44	0,20	12,1
	min	0,36	15,4	44	0,19	10,7	13,9	46	0,17	9,0	12,5	49	0,15	7,4
SWT22	max	1,08	44,0	43	0,53	14,0	39,6	45	0,48	11,5	35,5	47	0,43	9,3
	min	0,69	32,0	47	0,39	7,8	28,9	49	0,35	6,5	25,7	51	0,31	5,2

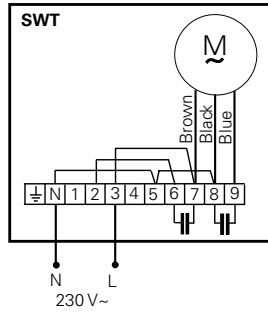
Incoming / outgoing water temperature 60/40 °C														
Type	Fan position	Airflow [m³/s]	Air temp. in = +10 °C				Air temp. in = +15 °C				Air temp. in = +20 °C			
			Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]
SWT02	max	0,31	7,5	30	0,09	4,9	6,4	40	0,08	3,8	5,3	34	0,06	2,7
	min	0,19	5,4	33	0,06	2,8	4,6	34	0,06	2,1	3,8	36	0,05	1,5
SWT12	max	0,56	13,0	29	0,16	8,3	11,1	31	0,13	6,3	9,2	34	0,11	4,4
	min	0,36	9,9	32	0,12	5,1	8,4	34	0,10	3,8	7,0	36	0,09	2,7
SWT22	max	1,08	27,1	30	0,33	5,9	23,2	33	0,28	4,5	19,3	35	0,23	3,2
	min	0,69	19,9	33	0,24	3,4	16,8	35	0,20	2,5	14	37	0,17	1,8

Incoming / outgoing water temperature 55/45 °C														
Type	Fan position	Airflow [m³/s]	Air temp. in = +10 °C				Air temp. in = +15 °C				Air temp. in = +20 °C			
			Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]	Output [kW]	Air temp. out [°C]	Water flow [l/s]	Pressure drop [kPa]
SWT02	max	0,31	8,1	34	0,2	20,5	6,9	34	0,17	15,4	5,8	36	0,14	11,1
	min	0,19	5,8	34	0,14	11,2	5,0	36	0,12	8,4	4,2	38	0,1	6,1
SWT12	max	0,56	13,6	26	0,33	31,9	11,7	32	0,28	24,3	9,9	34	0,23	16,8
	min	0,36	10,3	30	0,25	19,2	8,8	35	0,21	14,7	7,5	36	0,18	10,1
SWT22	max	1,08	32,1	33	0,71	25,6	25,3	34	0,62	19,1	21,2	37	0,51	13,7
	min	0,69	21,5	35	0,52	14,1	18,4	37	0,45	10,6	15,4	39	0,37	7,6

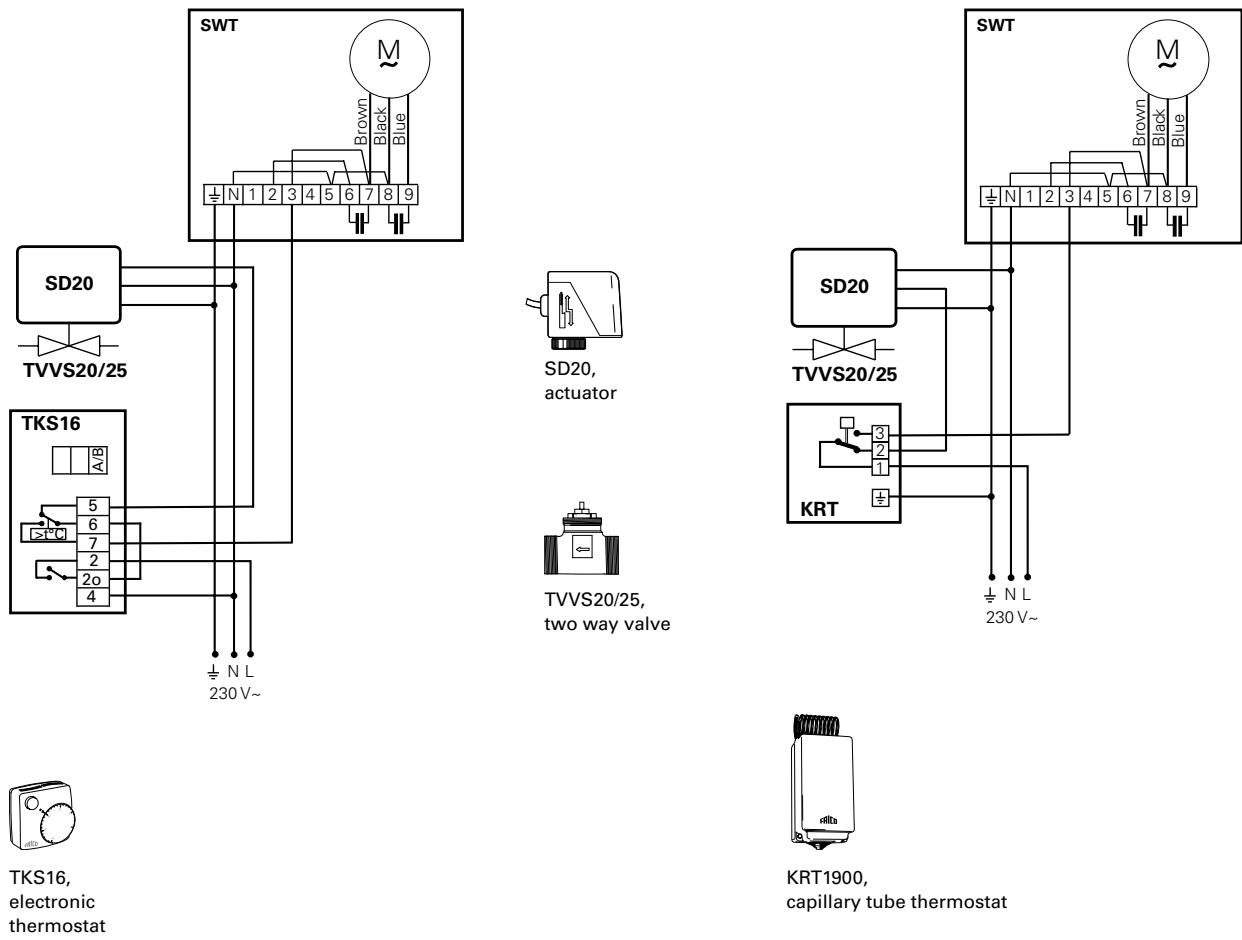
# Fan heater SWT

## Wiring diagrams

### Internal wiring diagram

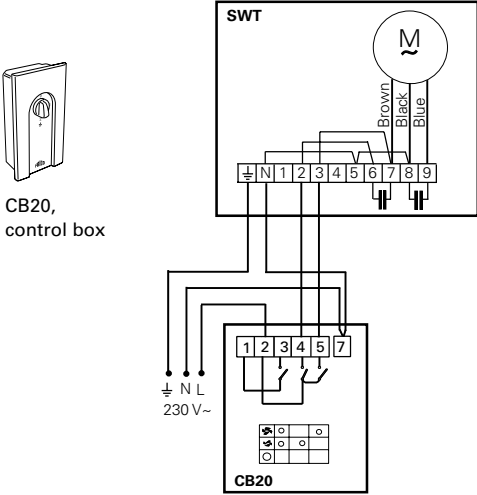


### Control by thermostat only



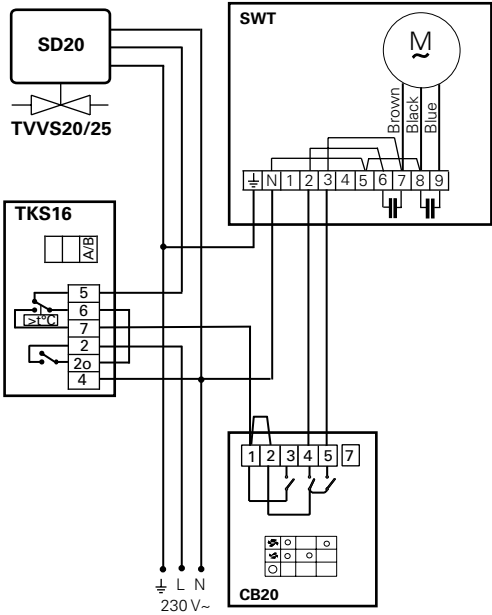
Wiring diagrams

2-step control of airflow only



CB20, control box

Thermostat and 2-step control

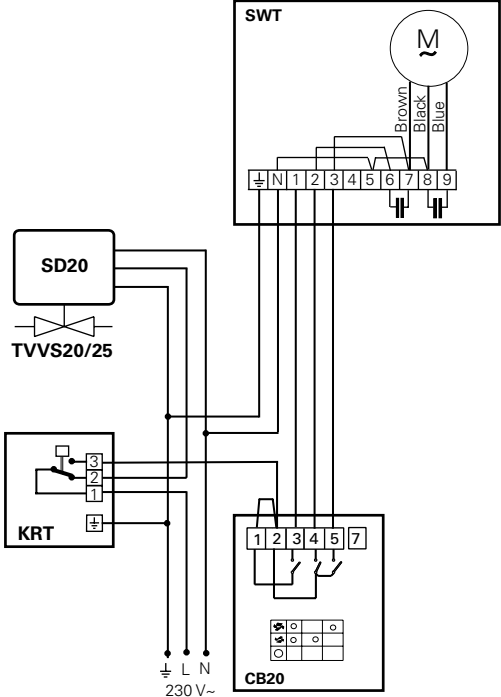


CB20, control box

TKS16, electronic thermostat

SD20, actuator

TVVS20/25, two way valve



CB20, control box

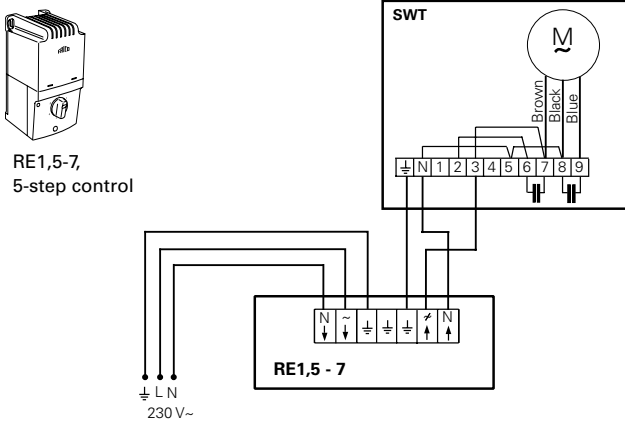
KRT1900, capillary tube thermostat



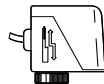
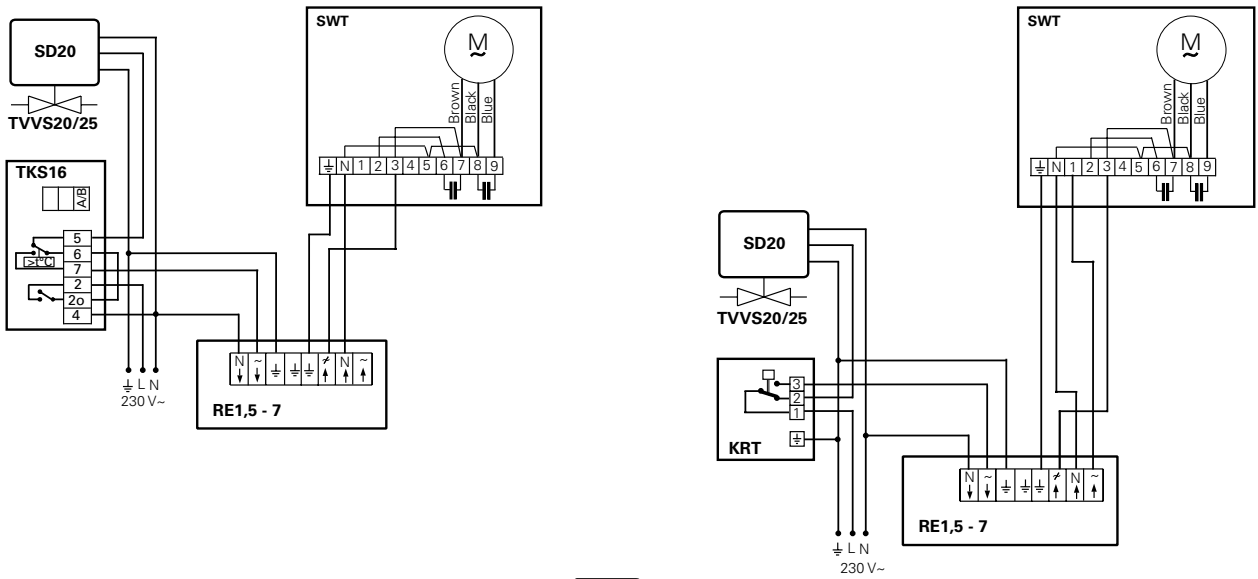
# Fan heater SWT

## Wiring diagrams

5-step control of airflow only



Thermostat and 5-step control



SD20, actuator



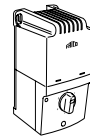
RE1,5-7, 5-step control



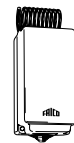
TKS16, electronic thermostat



TVVS20/25, two way valve



RE1,5-7, 5-step control



KRT1900, capillary tube thermostat